



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/517,117	08/17/2005	Franz-Leo Heinrichs	2002DE113	3132
25255 7590 03/24/2010 CLARIANT CORPORATION INTELLECTUAL PROPERTY DEPARTMENT 4000 MONROE ROAD CHARLOTTE, NC 28205			EXAMINER NGUYEN, COLETTE B	
			ART UNIT 1793	PAPER NUMBER
			MAIL DATE 03/24/2010	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/517,117

Applicant(s)

HEINRICH ET AL.

Examiner

COLETTE NGUYEN

Art Unit

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 January 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6,8-10,12,13,18,19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,8-10,12,13,18,19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB06)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Status of the application

This is the 2nd office action after RCE

Claims 1, 3-6, 8-10, 12,13,18 and 19 are as previous presented

Claim Rejections - 35 USC § 102/103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 6, 8-10, 19 are rejected as anticipated under 35 U.S.C. 102(b) and as an alternative is obvious under 35 U.S.C. 103(a) by Chartterjee (WO 00/68329).
4. Regarding claim 1, Chartterjee (329) teaches various emulsifier solutions for Bitumen with an acid number between 4.5 and 8.5 (example 2, page 14,15) using either saturated or unsaturated long chain fatty acids or a mixture thereof, then reacted with a polyamine, such as ethylene polyamine, including ethylene diamine (page 9, In 22, and claim 9). Alkali number is not discussed, however the starting products and the production methods are identical to those according to the application, and the acid number is less than 15, therefore the alkali number of the end product would be expected to be similar as it is know in the art that alkali number is an inherent property as the materials are commensurate and used in the same amounts. As for the ratio, Chartterjee discloses on page 19, Table 6. example 6-2 , the ratio of fatty acid (TOFA)and Di-ethylene triamine (DETA) is 2 to 1. As DETA and ethylene diamine are both ethylenepolyamine, it would have been obvious for one of ordinary skill in the art at

the time of the invention to substitute the DETA with ethylenediamine as they are equivalent. Chatterjee teaches a mole ratio range of 1:1 to 2: 1 of FA: EDA, it would have been obvious for one of ordinary skill in the art at the time of the invention to optimize the teaching by using different fatty acids mixture as disclosed by Chatterjee and mix them with the ethylene diamine to come up with the claimed compound. Since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranged involves only routine skill in the art. See In re Boesch, 205 USPQ 215 (CCPAP1980).

5. Regarding claim 6. In page 5 line 10, Chatterjee teaches at least one natural or synthetic fatty acid
6. Regarding claims 8-10. Chatterjee teaches a reaction product as claim 1 with further comprising at least one saturated or unsaturated fatty acids with ratio of the mixture of fatty acids to aliphatic diamine to be 2:1.(table 6) and may include both mono acid and diacid adducts. It would have been obvious for one of ordinary skill in the art at the time of the invention thru experimentation to claim that the carboxyl functionality is always 2, especially, Chatterjee already discloses the two choices: either mono or diacids adducts.
7. Regarding claim 19. Chatterjee teaches to post addition of TOFA (tall oil fatty acid) to emulsifier to adjust the acid number from 4.5 to 8.5. He does not mention to set the alkali number to less than 10, however as the acid number is adjusted from 4.5 to 8.5, it would have been obvious for one of ordinary skill in the art at the time of the invention to choose the instantly claimed alkali number to be less than 10 as it is

inherently that the alkali number would be less than 10 when the acid number is from 4.5 to 8.5 which is less than 15.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. **Claims 3-5, 12, 13 and 18** are rejected under 35 U.S.C. 103 (a) as being unpatentable over Chatterjee in view of Olivier FR 2765229).

10. Regarding claim 3-5. Chatterjee teaches a reaction product as claim 1, wherein a saturated or unsaturated fatty acid or a mixture thereof would be within 65% -75% by weight. He does not teach specifically carboxylic acids as a bitumen binder. Olivier, on the other hand teaches an additive for Bitumen made of amine compound with carboxylic acids having C₄-C₂₀ with preference to stearic acids (page4, line 24-28) to increase softening point and viscosity at low temperature. Both teachings and the claims differ in that they do not teach the exact weight percent of each fatty acid as recited in the instant claims. However, It would have been obvious to one of ordinary skill in the art at the time of the invention to use a carboxylic acid taught by Oliver as fatty acids to react with an ethylene diamine, with a disclosed range of 65-75% of fatty acid taught by Chatterjee and come up with a mixture of fatty acid combination as claimed to obtain a good Bitumen binding with low softening point and low viscosity at low temperature.

It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges of 67-75%, including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

"The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages", In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

11. Regarding claims 12, 13 and 18 Chatterjee teaches a reaction product as claim 8, wherein a saturated or unsaturated fatty acid or a mixture thereof with a range of 65% -75% by weight. He does not teach specifically carboxylic acids as a bitumen binder. Olivier, on the other hand teaches an additive for Bitumen made of amine compound with carboxylic acids having C₄-C₂₀ with preference to stearic acids (page4, line 24-28) to increase softening point and viscosity at low temperature. Both teachings and the claims differ in that they do not teach the exact same proportions as recited in the instant claims. It would have been obvious to one of ordinary skill in the art at the time of the invention to use a carboxylic acid taught by Oliver as fatty acids to react with an ethylene-diamine, as taught by Chatterjee, especially with the range of 65-75% of Fatty acids to obtain a good Bitumen binding with low softening point and low viscosity at low temperature.

It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges of 67-75%, including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

"The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages", In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Response to Arguments

1. Applicant's arguments filed on 01/15/2010 have been fully considered but they are not persuasive.
2. Argument 1: It is not persuasive as the low temperature flexibility is clearly discussed by Olivier on page 2 line 25-35.
3. Argument 2. Ethylene diamine is shown in table 5, example 5.1
4. Argument 3. Chatterjee discusses the chemical reaction of ethylene diamine with fatty acids in page 6, line 11.
5. Argument 4. similar products have similar acid numbers and alkali numbers. Chatterjee teaches to adjust the acid number from 4.5 to 8.5 and anyone with an ordinary skill in the art would know the equivalent alkali number which are inherently in the product. As for the ratio, Chatterjee teaches a ratio of 1:1 to 2:1 of Fatty acid to Ethylenediamine.

6. In conclusion, claims 1,3-6,8-10,12,13,18 and 19 remain rejected as previous stated in the last office action dated 09/04/2009.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **COLETTE NGUYEN** whose telephone number is (571)270-5831. The examiner can normally be reached on Monday-Thursday, 10:00-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curt Mayes can be reached on (571)-272-1234. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/COLETTE NGUYEN/
Examiner, Art Unit 1793

March 23, 2010

/Melvin Curtis Mayes/
Supervisory Patent Examiner, Art Unit 1793